

AMENDMENT TO THE CLAIMS

1. (Previously Amended) A test fixture assembly for testing a printed circuit board comprising:

a fixture including a first interface having a plurality of interface terminals adapted to electrically couple the fixture to a test device and a second interface having a plurality of interface terminals adapted to electrically couple the fixture to terminals on the printed circuit board and the plurality of interface terminals on the second interface being electrically coupled to the plurality of interface terminals on the first interface;

an actuator operably coupled to the fixture to install the fixture relative to the test device and the actuator movably supporting to move the fixture between a first position to support the fixture at a position spaced from the test device and a second position to install the fixture relative to the test device to provide an electrical connection between the plurality of interface terminals on of the first interface of the fixture and the test device and including an actuator to bias the printed circuit board relative to the plurality of interface terminals of the second interface to provide an electrical connection to the test device; and

a clamp assembly adapted to selectively secure the fixture relative to the actuator operably coupled to the fixture to install the fixture.

2. (Previously Amended) The test fixture assembly of claim 1 and further comprising a rotator coupled to the clamp assembly to

rotate the clamp assembly between a first orientation to load the fixture and a second orientation to clamp the fixture for installation.

3. (Previously Amended) The test fixture assembly of claim 1 wherein the clamp assembly includes first and second clamp members having opposed clamp surfaces to secure the fixture therebetween and one of said clamp members forms a support member to load the test fixture for installation.

4. (Previously Amended) The test fixture assembly of claim 3 wherein the fixture includes an elongated clamp opening having an elongated dimension and a narrower dimension and the other of said clamp members includes a head having an elongated dimension and a narrower dimension and the head is sized for insertion through the clamp opening in a first orientation with the elongated dimension of the head aligned with the elongated dimension of the clamp opening and the other of said clamp members being rotatable to a second orientation to align the elongated dimension of the head with the narrower dimension of the clamp opening to clamp the fixture relative to the one of said clamp members which forms the support member for installation.

5. (Previously Amended) The test fixture assembly of claim 1 and further including a cover including interface terminals electrically coupleable to the circuit board terminals for testing and the actuator to bias the printed circuit board relative to the plurality of interface terminals of the second interface to provide an electrical connection to the cover.

6. (Previously Amended) The test fixture assembly of claim 1 wherein the fixture includes guide holes for insertion of guide

pins on the test device or a cover.

7. (Previously Amended) The test fixture assembly of claim 1 wherein the first interface is orientated in a first direction and the second interface is orientated in a second opposed direction from the first direction.

8. (Previously Amended) The test fixture assembly of claim 1 wherein the actuator operably coupled to the fixture includes is a piston-cylinder actuator.

9. (Previously Amended) The test fixture assembly of claim 8 wherein the piston-cylinder actuator is pneumatically operated.

10. (Previously Amended) The test fixture assembly of claim 1 and comprising at least four clamp assemblies coupleable to at least four clamp openings on the fixture.

11. (Previously Amended) A test assembly comprising:

a fixture including a first interface having a plurality of interface terminals adapted to electrically to couple the fixture to a test engine and a second interface having a plurality of interface terminals adapted to electrically couple the fixture to terminals on a printed circuit board and the plurality of interface terminals on the first interface being electrically connected to the plurality of interface terminals on the second interface; and

means for removably installing the fixture to the test engine to provide an electrical connection between the interface terminals on the first interface and the test engine and a printed circuit board under test.

12. (Previously Amended) The test assembly of claim 11 wherein the means for removably installing includes a clamp assembly including opposed clamp members, one of said clamp members forming a support surface to load the fixture for installation and the other of said clamp members being positionable between a load position and a clamped position to clamp the fixture to a test engine.

13. (Original) The test assembly of claim 12 wherein the clamp assembly is coupled to an actuator movable between a first position spaced from the test engine to load the fixture on the support surface and a second position proximate to the test engine to provide an electrical connection between the fixture and the test engine to install the fixture.

14. (Currently Amended) A method for testing circuit boards comprising steps of:

removably clamping a fixture having a first interface having a plurality of interface terminals and a second interface having a plurality of interface terminals electrically coupled to the plurality of interface terminals on the first interface to an actuator assembly; and

operating the actuator assembly to move the fixture from a first position spaced from a test device to a second position so that the terminals of the first interface electrically interface with terminals on the test device to install the fixture for use; and.

~~operating an actuator to selectively biasing~~ at least one circuit board relative to the plurality of interface terminals of the second interface to test the at least one circuit board.

15. (Currently Amended) The method of claim 14 wherein the step of removably clamping the fixture comprising:

loading the fixture onto a support surface coupled to the actuator assembly and clamping the fixture relative to the support surface.

16. (Original) The method of claim ~~15~~14 wherein the step of removably clamping the fixture relative to the support surface comprises rotating a clamp member from a first orientation to a second orientation.

17. (Currently Amended) The method of claim ~~15~~14 and further comprising the steps of:

sequentially ~~coupling~~biasing a plurality of circuit boards relative to the plurality of interface terminals on the second interface; and  
sequentially testing operation of the plurality of circuit boards.

18. (Original) The method of claim 14 and further comprising the steps of:

operating the actuator assembly to retract the fixture from the test device;  
unclamping the fixture from the actuator assembly; and  
removing the fixture and installing a different fixture relative to the test device.

19. (Previously Presented) The method of claim 14 and further comprising the steps of:

positioning the at least one circuit board between the fixture and a cover having interface terminals; and  
biasing the cover relative to the at least one circuit board to electrically connect the circuit board to the

plurality of interface terminals on the fixture and the cover.

20. (Currently Amended) A test device assembly comprising:  
a test circuit adapted to electrically test a particular circuit board; and  
~~means for operably engaging the test circuit against the circuit board~~  
a clamp assembly operable to removably couple a fixture to an actuator assembly and the actuator assembly operable to install the fixture relative to the test circuit through an electrical interface between the test circuit and a plurality of interface terminals on a first interface of the fixture to provide an electrical interface for the circuit board to the test circuit through a plurality of interface terminals on a second interface of the fixture.

21. (Currently Amended) The test device assembly of claim 20 wherein the test ~~circuit~~device includes ~~at the~~a fixture operably movable between a retracted position, and an installed position ~~where the circuit board is tested~~relative to the test circuit.

22. (Currently Amended) The test device assembly of claim 21 wherein the test circuit ~~further~~ comprises a base and a cover ~~whereinto~~provide an electrical interface relative to both opposed sides of the circuit board are electrically engageablethrough the fixture installed relative to the base and through interface terminals on the cover.